North East Linguistics Society

Volume 13
Issue 1 *ALNE 13 / NELS 13*

Article 19

1983

Post-Verbal Subjects and the Definiteness Effect

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POST-VERBAL SUBJECTS AND THE DEFINITENESS EFFECT*

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In almost any discipline, the depth of explanatory insight into classic problems is often the measure of progress in the field. In this paper, I shall address just such a classic problem in linguistics, and show that recent advances, such as Case theory and Binding theory, enable us to approach this problem in a much more explanatory way then has up to now been possible. The problem I have in mind is the so-called 'Definiteness Restriction' on there-sentences in English, impersonal constructions in French and similar constructions in a wide variety of other languages. The problem is quite apparent: Why should the definiteness restriction exist? Why does it have the distribution that it does? Is this phenomenon explicable in purely syntactic terms, and if so, what sort of syntactic devices are involved?

Research on there sentences is extensive even within the short history of generative grammar, but for many years, the Definiteness Restriction, as its very name indicates, was simply a condition on the structural description of the transformation that derived there-sentences by either rightward movement and there-insertion, or by leftward movement and there-replacement, or by some variant of these options.

As the burden of explanation in grammatical theory shifted to surface interpretation in the early seventies, the Definiteness Effect, as I shall call it henceforth, was removed from the transformational component, instead, in the now more or less standard account of Milsark (1974,77), the definiteness restriction is claimed to be the result of general semantic principles interacting with a special rule of 'there' interpretation applying exclusively to there sentences in the context of the verb 'be'.

My central thesis is that no special rule of 'there' interpretation is either required, possible, or desireable; rather I shall show that the Definiteness Effect has a distribution that is entirely predictable on the basis of the interaction between very general, independently motivated syntactic principles and a simple construction-independent property of indefinite NPs.

To begin, it is probably best to review the nature of the phenomenon and the analysis of Milsark that I hope to improve upon. In 1), a simple there-sentence shows the contrast between the definite NP, the name 'Bill', and the indefinite NP 'a man'. The same contrast is shown for the French impersonal construction in 2).

1) There isn't a man/*Bill in the room.
2) Il est arrivé un homme/*Jean.
   there arrived a man/Jean

Among definite NPs, in the sense of this term relevant to our discussion, are definite descriptions and proper names, of course, as well as universal quantifiers such as 'every man', 'each man' and so on. Milsark suggests that what is in fact excluded as the post-verbal subject in there-sentences is any universally quantified NP where proper names and definite descriptions are taken to be like universal quantifiers in the relevant respects. This issue will not concern us too much here, and so I will adopt Milsark's proposal in this regard. The part of Milsark's analysis that I shall be concerned with is his crucial reliance on a rule that treats the word 'there' followed by 'be' as an existential quantifier over a there-sentence. If the post-verbal NP is definite, it will be excluded, since Milsark treats definite NPs as universals, and a universal would conflict with existential interpretation, or so the account goes. There are quite a number of problems that arise with this account, most of which I shall address at least in passing below. First of all, crucial reference is made to the word 'there', and presumably to its analogs in other languages. Secondly it must be specified that 'there' is in a context with the verb 'be', and finally, the rule of there-interpretation is aimed at a construction, and this is outside the spirit of many recent advances in syntax, which aim at reducing the role of systems of rules in favor of systems of principles. The proposals I shall make

will hopefully fit into the latter approach more naturally.

It should be kept in mind, though I shall not develop the idea here, that my analysis of there-sentences derives from a more general hypothesis, namely, the hypothesis that there is only one system or kind of indexing in grammar that is relevant to binding or anything else. This hypothesis about indexing leads to a number of important analytic consequences for a variety of constructions including, for example, an analysis of free inversion (in languages like Italian) that differs from most current accounts and that leads to other desireable conclusions.

I proceed now to the first part of my proposal, which concerns the conspiracy that I believe to be responsible for the distribution of the Definiteness Effect. My initial assumptions are few, and relatively uncontroversial. They are listed as A) through C) below.

A) *NP [-Case] if it is lexical
B) Coindexing between thematically non-distinct NPs transmits Case
C) A name must be free (i.e., not c-commanded by or coindexed with any other NP)

A) is simply the Case Filter of Rouveret and Vergnaud (1980), though other formulations of the Case Filter are also compatible with what I have to say. B) is Chomsky's (1981) refinement of the idea, first introduced in Chomsky (1980), that Case is assigned to indices, assuming instead that they are assigned to what I have referred to for the moment as thematically non-distinct NPs. I assume that two NPs are thematically non-distinct if they share the same semantic role of the same predicate to use current terminology, if they share the same theta-role. The principle that 'Names must be free', also known as Principle C) of the binding conditions, was first introduced by Lasnik (1976). I use the notion 'name' here in the extended sense to include any lexical NP except expletives, anaphors and pronouns, which fall under other generalizations. All of the latter except expletives count as arguments in Chomsky's sense, that is to say, they can fill the semantic roles assigned by predicates.

A)-C) are thus more or less neutral formulations of well-known principles and yet they provide the heart of my analysis. It will be concluded that the Definiteness Effect will hold in just those constructions where Principle C) is violated by an instance of B) forced by the Case Filter in A). I shall argue that there-constructions and il-impersonals systematically violate C) because the post-verbal subjects in 1) and 2) must get Case by coindexation since the post-verbal subjects are not in Case-marking contexts otherwise. The evidence presented to support this view will show that if the post-verbal subject

can get Case from another source, coindexation is unnecessary, C) is not violated, and the Definiteness Effect disappears. Notice that I am not claiming so far that the Definiteness Effect is explained by this conspiracy of A), B) and C), but merely that we will always see a Definiteness Effect whenever this conspiracy arises.

One argument of the sort just described may be based on instances of the il-impersonal construction where the Definiteness Effect does not hold (first brought to my attention by David Pesetsky and Barry Schein). Examples of this type are first reported by Kayne (1975). Consider the paradigm in 3), which includes the example in 3b) which was originally pointed out by Pollock in his 1981 GLOW talk.

3a) Jean a tiré sur le bateau.
Jean shot at/on the boat
b) Il a éte tiré sur le bateau/un bateau
there was shot at the boat
c)*il a été tiré (sur)
there was shot (at) (ignore the referential reading of 'il')

The first example in 3) is ambiguous between the locative reading for the PP under which 'sur le bateau' is interpreted as 'on the boat', and the idiomatic 'shoot at' reading. This ambiguity disappears, however, in 3b) where only the idiomatic 'shoot at' reading is allowed for those speakers that accept these sentences at all. The missing ambiguity, and here I digress slightly, seems an odd fact until we consider that French, unlike German, does not permit predicates to be denuded of all their arguments. I shall call this phenomenon the 'No Stripped Predicate' parameter, which is on for French, and off for German, as you can see in 4).

4a)*il a été dansé (sur le bateau)
there was danced (on the boat)
b) Es wurde getanzt

Thus 3c) is altogether ungrammatical because no argument is available, just as in 4a). In the case of 3b) however, the predicate 'tiré sur' still has an argument, 'le bateau', and is therefore wellformed. The locative reading is unavailable in 3b) for the same reason 4a) and 3c) are out, namely, the locative PP does not count as a verb argument in the relevant sense (as compared to say, 'object of').

Now the interesting property of 3b), for what concerns us here , is that it contrasts minimally with 5).

5) Il a été tué trois hommes/*les trois hommes
there were killed three men/the three men

The striking fact about the contrast between the 3b) and 5)

is that the Definiteness Effect holds for the impersonal sentence with 'tué', but not for the one with 'tiré sur', even though the idiomatic reading of 'tiré sur' creates a passive interpretation parallel to the agentless passive reading of 'tué'. Now in example 5), it is required that the post-verbal NP be related to a Casemarked position, and so 'les trois hommes' has to be coindexed with a thematically non-distinct NP in a Casemarked position, in this instance, 'il'. I make no special assumptions about the formative 'il' although I presume it is a clitic. Since the post-verbal NP in 5) is bound as a result of this indexing required by the Case Filter, Principle C) is violated, and the Definiteness Effect results from the conspiracy by hypothesis. Now let us turn to 3b) where the Definiteness Effect does not hold. A very simple way to account for the contrast between 3b) an 5) is to assume that the preposition 'sur' in 3b) assigns Case directly to its object. This means that the post-verbal NP, 'le bateau', need not be bound by 'il', as it can get Case independently of coindexation with 'il'. Since the post-verbal NP is free at S-structure, where the Case filter applies, it does not violate Principle C), which, as mentioned above, requires that names, in the extended sense, must be free.

A few other results can be mined from this set of data, but most of them would take me too far from my present topic. The important point is that the distribution of the Definiteness Effect can be predicted in French under the assumption that in examples like 5), the Case Filter requires a certain pattern of indexing which ought to be excluded by Principle C). One may think of the Defintieness Effect as a way of salvaging at least the grammaticality of indefinites in a position where in most instances, no NP should be able to appear at all. When a separate Case source short ciruits this conspiracy by assigning Case directly, the Definiteness Effect disappears.

The grammaticality of 3b), and the list of examples like it cited by Pollock, shows that the Definiteness Effect is not a property of the interpretation of impersonal 'il', counterexemplifying any rule of il-interpretation that incorporates the Definiteness Effect, or that requires it. Notice, moreover, that any rule of il impersonal interpretation intended to apply to just the right class of verbs would have to list all such verbs in the rule. Under this listing, it would be an accident that verbs with prepositional object complements that appear in the impersonal construction are systematic exceptions to the rule.

A similar argument can be constructed on the basis of impersonal passives in German, which also evidence the Definiteness Effect, as in 6).

6) Es wurde ein/*der Mann getötet.

There was a/the man killed

In German, Dative Case cannot be absorbed by passive morphology. Thus 'dem Hund' in 7) can be definite as it gets Case in place and coindexing with the impersonal 'es' is unnecessary.

7) Es wurde dem Hund geholfen.
there was the-DAT dog helped

Since German does not have pseudopassives, the same argument can be made for prepositional objects selected by the verb. In 8), the Case of the prepositional object is Accusative.

8) Es wurde an den Hund gedacht.
there was of the-ACC dog thought

Once again, as in the examples with impersonal 'il', a rule of 'es' interpretation is neither necessary, nor capable of predicting the distribution of the Definiteness Effect.

Thus whenever Case assignment is direct, that is to say, not by inheritance, the Definiteness Effect is neutralized. The crucial property that seems to unleash the Definiteness Effect, then, is Case inheritance, though one might still object in the following reasonable fashion: So far I have only shown that the presence of 'there', 'es' or 'il' is not a sufficient condition for the Definiteness Effect to hold; Could it not be the case that the presence of an impersonal element is still a necessary condition for the appearance of the Definiteness Effect in a given context? The easiest way to answer this objection is to find a context in which the Definiteness Effect holds even though no impersonal element is present.

It is not necessary to look very far. Let us consider what has been called the standard dialect of Dutch, although, sociologically speaking, it is probably not a very good term. Standard Dutch is essentially just like German in that impersonal passives appear rather freely, and the element that appears in subject position is the expletive formative 'er', parallel to 'es' in German. Consider the standard Dutch sentences in 9) (I use subordinate sentences to abstract away from the effects of the verb second phenomenon).

9a) Hij zei, dat er in de tuin een/*het kind
he says that there in the garden a/the child
gewassen zal worden.
washed will be

b) Hij zei, dat er in de tuin aan een/het kind
he says that there in the garden of a/the child
gedacht werd.
thought was

These examples are parallel to the impersonal passives in German in that the prepositional object complement can be definite, while the passive of what is otherwise a direct object is only grammatical with an indefinite NP. This state of affairs fits our now very familiar analysis. It appears that the verb adjacent subject inherits Case from 'er' where the Definiteness Effect holds in 9a), but not in 9b). In the latter case, 9b), a preposition assigns Case directly, thus neutralizing the Definiteness Effect. Now it is a fact about standard Dutch that the 'er' cannot be omitted when nothing else fills the subject position in a tensed sentence. Thus 10) is ungrammatical in standard Dutch whether the NP appearing next to the verb is definite or not.

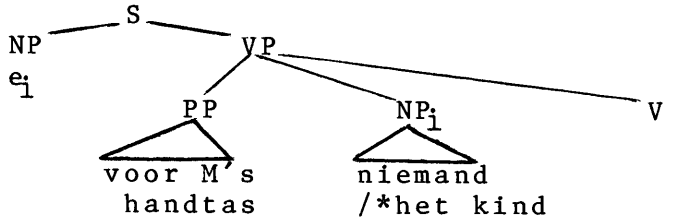
10)*Ik verwachtette, dat __ voor Marie's handtas
I expected that for Marie's purse
niemand/het kind zou terugkommen.
noone/the child would come back
(Standard Dutch) (Perlmutter and Zaenen)

It is pointed out by Perlmutter and Zaenen (1978), however, that there is a dialect of Dutch, known in the literature as Dutch A, that allows the appearance of 'er' to be optional in all of the impersonal construction environments where it is obligatory in standard Dutch. Thus 10), repeated in 11), is grammatical in Dutch A, but only, curiously enough, with an indefinite NP in the verb-adjacent position.

11) Ik verwachtette, dat __ voor Marie's handtas
niemand/*het kind zou terugkommen.
(Dutch A) (Perlmutter and Zaenen)

This suggests, as Perlmutter and Zaenen point out, that an empty element in fact inhabits the subject position, exactly parallel to the obligatory expletive 'er' in standard Dutch. If the verb-adjacent subject is inheriting Case from this empty NP in clause initial subject position, as in the diagram in 12), it then follows that the Definiteness Effect should hold.

12)



Although the examples have to be carefully constructed, the same result can established for German, where the impersonal 'es' does not appear outside of the matrix COMP position in impersonal sentences. Thus in the subordinate clause in 13), where no clause initial subject appears, the Definiteness effect still holds, just as in Dutch A.

13) Er sagte, dass im Zimmer ein Mann/*der Mann
he said that in-the-DAT room a-NOM man/the-NOM man
wartete.
waited

Thus German and Dutch A provide us with just the sort of examples we were looking for in that the Definiteness Effect has been shown to hold in contexts where no overt expletive appears at all. Therefore no rule of interpretation keyed to the presence or absence of an impersonal formative can possibly predict the distribution of the Definiteness Effect, as it has just been demonstrated that such a rule would both overgenerate, in French, German and Dutch, and undergenerate in German and Dutch A. Only the conspiracy related to Case inheritance gives us the right prediction in every instance.

There is quite a bit of evidence supporting this view of the Definiteness Effect, but for reasons of space, it is not appropriate to develop them all here. There is, for example, a context in Standard Dutch where 'er', contrary to the general rule, is optional, as illustrated in 14a,b).

14a) Hij zei, dat er Karel een/*het boek bevallen is.
he says that there Karel a/the book pleased has
He says that a/the book has pleased Karel.

b) Hij zei, dat Karel een/het boek bevallen is.

Den Besten (1981) has argued that when the 'er' is missing in these constructions of 'Nominative/Dative Inversion', Nominative Case is exceptionally assigned directly to the direct object position. There is no space here to sketch his reasoning, but if he is right, as I believe he is, then it is predicted by the approach to the Definiteness Effect proposed here that 14a) will evidence the Definiteness Effect because the subject inherits Case from 'er', but in 14b), where den Besten claims that there is direct assignment of Nominative Case to the verb adjacent subject, it is predicted that the Definiteness Effect is neutralized. The data bear this out exactly, and similar, though somewhat more abstract arguments may be established for German as well.

I have also developed an analysis of the list reading for there-sentences in English. The relevant context for such sentences in English is something like the following: Who do we have to play Othello? Well, there's Tom, Bill and Joe. One may well ask how it is possible to have definite NPs here. The idea behind my analysis is that the verb 'be' in English has two subcategorizations, one that is equative and assigns Case, the other that is predicative, and does not assign Case. The equative 'be' is the be of sentences like 'The president is John.' Predicative 'be' is

exemplified in sentences like 'John is silly/a colorful character.', where the NP is predicative. Very briefly, the most interesting prediction made by this analysis is that there should be no list reading for French impersonal sentences, where the relevant verbs never assign Case, although list readings should be possible in the 'il y a' construction, because the verb 'avoir' can also assign Case. This seems to be correct, since it is possible to answer a question in French like the one in English above with an 'il y a' sentence. For example, 'Qui sait jouer Othello?', can be answered, 'Il y a Jean, il y a Maximilien', etc. Thus it is not possible to answer a question like 'Qui est arrivé?', with a statement like '*Il est arrivé Jean, Il est arrivé Marie, etc.' Some factors that require a longer discussion interfere with the same test for English, and so I leave this matter aside here. The important point is that the list reading for there-sentences in English and 'il y a' sentences in French can now be ascribed to the predictable absence of the Definiteness Effect whenever a post-verbal NP is assigned Case directly instead of be inheritance, thus confirming my general view.

Now the theoretical issue that arises here is quite clear. Why is it that when indefinites receive Case by inheritance they can avoid C), but definites can never avoid Principle C). From what I've said so far about the conspiracy that predicts the Definiteness Effect, one would expect that no full lexical NP could receive Case by inheritance without violating Principle C). It was for precisely this reason that Chomsky (1981) introduced 'superscripts', a special form of indexing that transmitted Case without counting as a Binding violation by stipulation. As stated earlier, I am assuming a more constrained theory here which only allows for one style of indexing in the theory of grammar, and so I must deal with this apparent conflict of principles in another way.

In order to address this issue, it is necessary to make some more assumptions, most of them adaptations from Chomsky (1981). First let us assume that coindexing between thematically non-distinct NPs, that is to say, NPs bearing the same theta-role from the same predicate, form a theta-chain. Theta-chains consist only of argument positions, these being positions where grammatical relations are assigned, such as subject of or object of but not COMP, and to be well-formed, a theta-chain must include at least one position to which a theta-role is assigned directly. The latter positions are called theta-positions. In a passive sentence like 15), for instance, the theta-position is the direct object position, and the theta-chain consists of 'John' followed by trace, where 'John' and the trace are coindexed as they are in 15).

15) John$_i$ was killed e$_i$

The coindexing chains that transmit Case mentioned in B) are thus independently motivated theta-chains, and so B) can be reformulated as B′).

B′) Every member of a theta-chain has Case if one of its members is assigned Case directly.

B′) then, is what I mean by Case inheritance. Now I shall assume also many of the central tenets of Government Binding Theory (Chomsky, 1981), in particular the Theta-criterion as in D), the remaining Binding Conditions, as in E) (recall that C) is also known as Principle C) of the Binding Conditions) and finally I assume the functional definitions of empty categories as in F).

D) Theta-criterion
   a) Every argument must be assigned to one and only one theta-role.
   b) Every theta-role must be assigned to one and only one argument.

E) Binding Conditions
   a) An anaphor must be bound in its governing category.
   b) A pronoun must be free in its governing category.

F) The Functional Definitions of Empty Categories
   1) X is a variable if it is locally bound by a non-argument (A′-position).
   2) An empty category is an anaphor if it is not a variable.
   3) An empty category is pronominal if it is free or locally A-bound by an NP with a separate theta-role.

To see how all of this is relevant to some of the issues that I have discussed so far, reconsider example 11) as it is bracketed in 12). Recall that 12) is ungrammatical in standard Dutch but grammatical in Dutch A. Let′s see what the principles just introduced have to say about these cases. Since the empty category in 12) is free, it must be pronominal by F3), since the empty category is not a variable, that is to say, it is not bound by an operator, it must be anaphoric by F2). Thus the empty category in 12) must be PRO. As the subject of a tensed sentence is generally assumed to be a governed position, PRO cannot appear there, because if PRO has a governing category, then Principles A) and B) of the Binding Conditions make conflicting requirements on PRO, and it is ruled out. Thus 12) violates not only Principle C) of the Binding Theory with respect to the bound full lexical NP ′een kind′, but also principles A) and B) of the Binding Theory with respect to PRO. Recall that we are assuming throughout that the

empty category in 12) and the verb-adjacent subject form a theta-chain, otherwise that subject would be excluded by the Case Filter. We can now reformulate the question I posed earlier; How is it that indefinite theta-chains can escape the Binding Conditions while only definite theta-chains are excluded in these contexts as we would, in general expect.

It has recently been argued, as part of Chomsky's Projection Principle, that the Theta-criterion applies at every syntactic level, including S-structure and LF-structure, the level following May's (1977) rule of QR. Aoun (1982) has extended this idea to the Binding Conditions, which he has suggested apply at LF-structure as well as at S-structure. Let us adopt this suggestion. Now suppose that the difference between indefinite theta-chains and definite theta-chains is simply that the indefinite theta-chains and their members do not have to be analyzed by the Binding Conditions at S-structure, while definite theta-chains have to be analyzed by the Binding Conditions at both levels. Consider example 16a).

16a) S-structure

S [there$_i$ is a man$_i$ in the room]

b) LF-structure

S [a man$_i$ S [there$_i$ is [e_i] in the room]]

At S-structure, the theta-chain containing 'there' and 'a man' would be ill-formed if the Binding Conditions, particularly Principle C), are applied to it. If 'a man' were replaced with 'the man', then 16a) would have to be ungrammatical because definite theta-chains, that is, a theta-chain containing a definite NP, must be analyzed at S-structure. In order for the S-structure in 16a) to be grammatical, it must avoid the application of the Binding Conditions, and with indefinite theta-chains, this option is available by hypothesis. So we are assuming now that 16a) is not analyzed at S-structure, but must be analyzed at LF-structure. 16b) is the LF-structure of 16a) after QR has extracted the quantified expression 'a man' and adjoined it to S. The S-adjoined position is generally considered to be a non-argument position like COMP. Since 'a man' in S-adjoined position now locally A'-binds the formative 'there' in subject position, 'there' is now a variable by the definition in F1). The trace bound by 'there' is now simply an anaphor and is well-formed as such. Now I have been assuming throughout, as is generally done in Government-Binding Theory that variables count as arguments with respect to the Theta-criterion if they are in argument positions, and so I take 'there' to be an argument at LF-structure. NP-traces such as the anaphoric trace bound by 'there' in 16b), are never treated as arguments. It follows that 16b) is well-formed with respect to the Theta-criterion. Notice that this account transposes without any alteration to the case of 12), where the subject

position is an empty category at S-structure. Thus a context free property of indefinite theta-chains, namely that they need not be analyzed by the Binding Conditions at S-structure, permits these theta-chains to be grammatical in Case inheritance contexts where definite theta-chains, which cannot be exempted in this manner, will always be excluded at S-structure.

It is important to note, incidentally, that exempting indefinites from the Binding Conditions at S-structure preserves an account of strong crossover of quantifiers at LF-structure. Consider the examples in 17) and 18) with their accompanying LF-structure representations after QR has applied.

17a)*He$_i$ likes someone$_i$

b) [$_S$ someone$_i$ [$_S$ he$_i$ likes [e$_i$]]]

18a)*He$_i$ likes everyone$_i$

b) [$_S$ everyone$_i$ [$_S$ he$_i$ likes [e$_i$]]]

Notice that QR treats both quantifiers the same, so that QR alone cannot account for the Definiteness Effect. Now consider the empty categories in object position in 17b) and 18b). In both examples, the empty category is A-bound by the subject, and is hence anaphoric, exactly as in the impersonal constructions I have been discussing. In contrast to the impersonal constructions, however, the object empty categories in 17b) and 18b) are also pronominal, since they are bound by a position with a separate theta-role. Thus the empty categories in 17) and 18) are both PRO at LF-structure, and PRO is excluded in governed positions in both examples by the Binding Conditions applying at LF-structure.

Now it is worth pausing here to consider how well the questions posed at the beginning of this paper have been answered. The distribution of the Definiteness Effect has been shown to be predictable on the basis of syntactic principles of formal grammar, a result interesting all by itself. The formal expression of the principle that interacts with QR and the Binding Conditions to predict the distribution of the Definiteness Effect is the construction independent statement in G).

G) Exempt Indefinite theta-chains from the Binding Conditions at S-structure (optional).

Thus G) is responsible for the existence of the Definiteness Effect in contexts where Case inheritance also holds, as derived by the interaction of independently motivated principles. As G) is the only novel principle I have proposed, it is naturally the focus of the next question,

namely, why should indefinite theta-chains differ from definite theta-chains in just this way? However the latter question is answered, it is a question at a deeper level of abstraction than those with which we began. While I have developed some ideas about how we might go about answering the latter question (cf. Safir, 1982), I must set these issues aside here for reasons of space. As I stated at the outset, the analysis of the Definiteness Effect is a classic problem in linguistics. One of the properties of classic problems is that they are almost never solved, rather they are advanced. I hope that the analysis of the Definiteness Effect I have presented here represents an advance in just this sense.

* A longer version of this paper presented at the 1982 GLOW Conference in Paris appears in French in Safir (to appear), but the basic research for both versions is essentially (though not entirely) drawn from Chapters 4 and 5 of my thesis (Safir, 1982). I preserve here the format of a lecture. More complete references and more extensive discussions alluded to in the text should be sought (and hopefully found) in my thesis. This research has been supported in part by a post-doctoral fellowship from the Sloan Foundation at the University of Pennsylvania.

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